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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,156	02/19/2002	Olaf Jose F. Hirsch	US 028003	9302

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EXAMINER
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ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2668

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/080,156

Applicant(s)

HIRSCH ET AL.

Examiner

AHMED ELALLAM

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the numeral character "330" is not shown in figure 3, as indicated in the specification on page 8, paragraph [028]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

On page 2, paragraph [009], line 2, the term "second" is missing after "first and".

On page 5, paragraph [018], line 3, the phrase "content-free" should be changed to "contention-free" as indicated on line 9.

Appropriate correction is required.

### ***Claim Objections***

3. Claim 20 is objected to because of the following informalities:

In claim 20, line 4 reference is made to the "station" in singular form, whereas a first and second stations were previously indicated. It is not clear to which station "the station" refers. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 12 and 20, the meaning of phrase "the contention-free period comprises a sub-contention period" is confusing because the common definition of contention-free period is understood to have no contention between stations as defined in the WLAN standards (802.11), the meaning of sub-contention period being part of the contention-free period is indefinite.

Note: the claimed " contention-free period followed by a contention period, and, the contention-free period comprises a sub-contention period" is interpreted hereinafter to be the same as "***contention-free period followed by a contention period, and, the contention period comprises a sub-contention period***". Examiner believes it is more

appropriate to interpret the claimed limitation as such, because the sub-contention period would commonly belong to a contention period. In addition, the specification discloses that the stations 1-3 (DSSS/CCK stations) do not send data during the sub-contention period that is the sub-contention period doesn't belong to a free contention period.

Claims 2-11, and 13-19 depend from rejected respective claims 1 and 12, thus they are subject to the same rejections.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 11-15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al, US (6,990,116) in view of Admitted Prior Art, specification paragraphs [002-[003]. Hereinafter, referred to as Young and APA respectively.

Regarding claims 1, 12 and 20, with reference to figure1 and 5, Young discloses an access point AP-A 112 and a plurality of end stations A-1-A-n that are connected through a wireless connection, see column 4, lines 16-26; Young also discloses a contention free period 520 followed by a contention period 530, wherein a point coordinator at the access point sends a beacon frame 525 to all the stations in its

BSS (Base Station Subsystem), the beacon frame communicates to the stations the length of the contention-free period, where the point coordinator controls the medium during the PCF access period 527, which is followed by contention period the contention period in accordance with DCF access (Distributed Coordination Function), see column 8, lines 20-31. (Examiner interpreted the communication of the length of the contention-free period to all the stations as being the claimed *beacon frame indicating contention-free period followed by a contention period, and, the contention period comprises a sub-contention period*, because of the periodical repetition of the beacon frame, the contention period is implicitly indicated as part of the contention free period indication).

Young doesn't specify a first station using a first modulation scheme and a second station using a second modulation scheme, the second station using the second modulation scheme during the sub-contention period (claims 1, 12, and 20 do not specify the first modulation scheme and second modulation scheme are different, thus the first and second modulation schemes are interpreted as being the same).

However, APA specifies modulation schemes such as DSSS/CKK supported by IEEE 802.11 standard or OFDM modulation scheme as specified by IEEE 802.11a standard. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made to have the mobile stations of Young use specific modulation scheme during the contention period as specified by APA so that the WLAN of Young can utilize the standard Wireless LAN protocols. The advantage would be the implementation of the well-established WLAN protocols in Young's WLAN.

Regarding claims 2 and 13, APA discloses DSSS/CKK modulation being established as part of IEEE 802.11 standard. See [002].

Regarding claims 3 and 14, APA discloses IEEE 802.11a standard defines a physical layer based on the orthogonal frequency division multiplexing (OFDM).

Regarding claim 4, with reference to figure 5, Young shows that the contention period 530 occurs at the end of the contention free period 527.

Regarding claims 5-7 and 15, Young discloses having the access point dynamically adjust the appropriate access mechanism (DCF or PCF) (point coordination function or Distributed coordination function) based on load conditions, including the number of stations, see column 8, lines 47-67 and column 9, lines 1-10, see also figure 6.

Regarding claim 11, Young discloses the WLAN operating under IEEE 802.11 specification. (See column 2, lines 36-40).

6. Claims 8, 9, 10, 16, 17, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of APA as applied to respective claims 1 and 12 above, and further in view of Cimini, JR. et al, US 2003/0152058. Hereinafter referred to as Cimini.

Regarding claims 8, 16 and 18, as discussed above, Young in view of APA discloses substantially all the limitation of claims 8, 16 and 18 except that they do not disclose that during the contention period, the access point sends a request-to-send frame comprising information representative of second modulation scheme (as in

claims 8 and 16) and the access point receives a request-to-send frame from the second station comprising information representative of second modulation scheme (as in claim 18).

Regarding claims 9 and 17, as discussed above, Young in view of APA discloses substantially all the limitation of claims 9 and 17 except that they do not disclose that during contention period, the second station transmits request-to-send and clear-to-send frames modulated according to the second modulation scheme.

As to claims 8, 9, 16 and 17:

Cimini discloses that the DCF (Distributed coordination function) with Request to Send (RTS)/Clear to Send (CTS) has been standardized, and that The RTS/CTS is a natural choice for adaptive coding/modulation. See paragraph [0031]. (The DCF access is implemented during the contention period as part of IEEE 802.11 standard). (Claimed the access point sends a request-to-send frame comprising information representative of second modulation scheme, during the contention period, as in claims 8 and 16, and the second station transmits request-to-send and clear-to-send frames modulated according to the second modulation scheme, during the contention period as in claim 17 (A modulation is necessary for exchanging the RTS/CTS by the wireless unit during the contention period) and the claimed access point receives a request-to-send frame from the second station comprising information representative of second modulation scheme as in claim 18) . It would have been obvious to a person of ordinary skill in the art, at the time the invention was made to have the stations of Young implement the standardized



RTS/CTS during the DCF (claimed contention period) so that the exchange of channel information (coding/modulation) would take effect prior to the data transmission begins. The advantage would be the provisioning of accurate rate adaptation and coding I the system of Young in view of APA. (See Cimini [0031].

Regarding claims 10 and 19, Cimini discloses that RTS/CTS is a natural choice for adaptive coding/modulation because the RTS/CTS pair (access point, wireless station) can exchange channel information before the data packet transmission begins so that accurate rate adaptation can occur. (Claimed the access point received from the second station an information field representative of the second modulation capability when the second station joins the local area network).

### ***Conclusion***

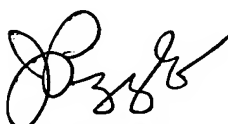
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: See reference cited in attached form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AE  
Examiner  
Art Unit 2662  
2/24/06



**JOHN PEZZLO**  
**PRIMARY EXAMINER**